## REMARKS

In the Office Action dated January 31, 2008, claims 1-28, 31, 33-35 and 37-59 are pending. Claims 1, 5-6, 12-13, 22-24, 27-28, 38-41, 43, 45, 47, 49 and 54-59 are examined to the extent that the claims read on the elected sequences. Claims 6, 24 and 27 are objected to. Claims 1, 5, 6, 12-13, 22, 23, 24 27, 28, 38-41, 43, 45, 47, 49 and 54-59 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Claims 1, 5, 6 and 59 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 5, 6, 12-13, 22-24, 27, 28, 38-41, 43, 45, 47, 49 and 54-59 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Claims 1, 24, 27-28 and 59 are rejected under 35 U.S.C. §102(e) as anticipated by McIntosh (U.S. Patent No. 6,767,896 B1). Claims 1, 24 and 27-28 are rejected under 35 U.S.C. §102(e) as anticipated by Olivera et al. (U.S. Publication No. 2003/0109670 A1). Claims 1, 5, 6, 12-13, 23, 27, 28, 38-41, 43, 45, 47 and 49 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as allegedly unpatentable over claims 1-7 of co-pending Application No. 10/537,704.

This Response addresses each of the Examiner's rejections and objections. Applicants therefore respectfully submit that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

Claim Objection

The Examiner has objected to claims 6, 24 and 27. Claim 6 has been amended to correct the typographical error "said chain" and recite "side chain". Claim 24 has been amended to delete the reference to claim 5, and new claim 60 has been added to delineate this deleted aspect of previous claim 24. Claim 27 has been canceled. As such, it is respectfully submitted

that the objection to claims 6, 24 and 27 is overcome, and withdrawal thereof is respectfully requested.

35 U.S.C. §112, First Paragraph

Claims 1, 5, 6, 12-13, 22, 23, 24 27, 28, 38-41, 43, 45, 47, 49 and 54-59 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

The Examiner states that the claims read on many non-elected polypeptide sequences. The Examiner also contends that the type of transporter proteins recited in the claims, namely, a neuronal amine transporter, is inconsistent or not supported by the specification.

Applicants respectfully submit that the fact that the claims read on non-elected sequences does not constitute a basis for a written description rejection. In an effort to advance prosecution of the application, Applicants have amended the claims to delete non-elected peptide sequences, and to replace "neuronal amine transporter" with "neuronal noradrenaline transporter", substantially consistent with the Examiner's suggestion set forth on page 5-6 of the Office Action except that in claims 1, 5, 6 and 28, "Gly" and "Lys" have been deleted from the list of amino acid residues that are subject to side chain modifications. In light of the amendments to claims 1, 5, 6 and 28, claims 12-13, 38-41 and 54 have been canceled without prejudice.

Applicants further respectfully submit that the claims, as presently recited, are adequately described in the specification in full compliance with the written description requirement. Additionally, the claims as amended reflect the elected sequences. As such, withdrawal of the written description rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

35 U.S.C. §112, Second Paragraph

Claims 1, 5, 6 and 59 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. The Examiner's rejection is directed to the delineation of the disulfide bonding pattern recited in claim 59. The Examiner has suggested an alternative description of the bonding pattern.

Applicants have canceled claim 59, and have amended claims 1, 5-6 and 28 to delineate the disulfide bonding pattern of the conotoxin peptide using language suggested by the Examiner. Withdrawal of the rejection is therefore respectfully requested.

Claims 5, 6, 12-13, 22-24, 27, 28, 38-41, 43, 45, 47, 49 and 54-59 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. According to the Examiner, these claims recite the term "loop 1", which allegedly lacks antecedent basis in claim 1.

Applicants have amended claims 5-6, 22-23 and 28 by deleting the recitation of "loop 1". The other identified claims do not include this recitation. Therefore, withdrawal of the rejection is therefore respectfully requested.

35 U.S.C. §102(e)

Claims 1, 24, 27-28 and 59 are rejected under 35 U.S.C. §102(e) as anticipated by McIntosh (U.S. Patent No. 6,767,896 B1).

According to the Examiner, McIntosh discloses compositions comprising the conotoxin polypeptides Mar1 (SEQ ID NO: 12) and Q818 (SEQ ID NO: 14), which comprise the sequence of Applicants' SEQ ID NO: 3- CCGYKLCXXC. McIntosh also discloses the polypeptide of their SEQ ID NO: 3, which is a polypeptide of 12 amino acids that allegedly comprises instant SEQ ID NO: 3 (see col. 4, lines 1-42). The Examiner also contends that McIntosh et al. disclose several mature peptides of 11-13 amino acids in length, including Mar 1

and Mar2. The Examiner indicates that Mar2 of McIntosh is a peptide of 12 amino acids that comprises instant SEQ ID NO: 3 (see col. 4, lines 1-42).

With respect to Mar1 disclosed by McIntosh, this peptide is identical with χ-MrIA (SEQ ID NO: 1) of the instant application (see page 2, line 4 of the specification), which is expressly excluded by the proviso language in instant claims 1, 5-6 and 28.

With respect to Mar2 and SEQ ID NO: 3, Mar2 is also expressly excluded by the proviso language in instant claim 1. The disclosure of Mar2 and SEQ ID NO:3 by McIntosh, both of which represent 12 amino acid peptides, does not anticipate the peptide of claim 5 or claim 6, which is composed of 13 or more amino acids.

With respect to SEQ ID NO: 12 and SEQ ID NO: 14 of McIntosh, both of these sequences consist of 61 amino acids, and represent a "propeptide". In contrast to the presently claimed "χ-conotoxin peptide having the ability to inhibit a neuronal noradrenaline transporter", there is no evidence provided in McIntosh et al. or elsewhere demonstrating that these 61 amino acid propeptides are "χ-conotoxin" peptides, or have an ability to inhibit a neuronal noradrenaline transporter.

The Examiner has argued in the bottom paragraph on page 8 of the Action that:

> "[C]laims 1, 27 and 28 do not recite that SEQ ID NO: 3 has a disulfide bond between any two C residues. The claims do not recite an upper limit for the length of the polypeptides. The claim language implies that it is the presence of SEQ ID NOS: 3 and 5 that confers the particular activity, not the length of the polypeptide. The disulfide bonds may form spontaneously in vivo or in vitro, as disulfide bonding in a three-dimensional structure is determined by the amino acid sequence."

Applicants respectfully submit that the peptides of claims 1, 5, 6 and 28 are now further defined by the disulfide bonding pattern characteristic of a "χ-conotoxin peptide", as disclosed on page 3, lines 17-24 of the specification. Applicants respectfully submit that the

propeptides taught by McIntosh are not shown to have any disulfide bond or activity, in contrast to the presently claimed subject matter. In fact, the reference itself admits that these propeptides require post-translational processing in order to give rise to the smaller mature neuroactive toxins (i.e., conotoxin peptides) (col. 20, lines 49-51).

Therefore, Applicants respectfully submit that McIntosh et al. do not teach the claimed invention. Withdrawal of the §102(e) rejection based on McIntosh et al. is respectfully requested.

Claims 1, 27 and 28 are rejected under 35 U.S.C. §102(e) as allegedly anticipated by Olivera (U.S. 2003/0109670 A1).

According to the Examiner, Olivera discloses a polypeptide of SEQ ID NO: 352, which comprises the conotoxin polypeptide Mr1.1 and comprises SEQ ID NO: 3 (CCGYKLCXXC) of the present application. Olivera also discloses a polypeptide of SEQ ID NO: 353, a toxin of 12 amino acids that allegedly comprises instant SEQ ID NO: 3.

Applicants observes that in SEQ ID NO: 353 of Olivera, when Xaa5 is Tyr and Xaa3 is Pro, the resulting sequence reads on SEQ ID NO: 3 of the present application, but will also be effectively excluded by the proviso language referring to "Au1.4" in instant claim 1. The sequence of "Au1.4" is defined in the present specification on page 2, line 25.

As to the polypeptide of SEQ ID NO: 352, disclosed by Olivera et al., this polypeptide consists of 62 amino acids and also represents a "propeptide" that requires post-translational processing in order to give rise to a smaller mature neuroactive toxin. There is no evidence provided in Olivera or elsewhere demonstrating that this 62 amino acid propeptide is a "χ-conotoxin peptide", has the recited disulfide bonds, or has an ability to inhibit a neuronal noradrenaline transporter. Therefore, Applicants respectfully submit that Olivera does not teach

the claimed invention. Withdrawal of the §102(e) rejection based on Olivera is respectfully requested.

Double Patenting

Claims 1, 5, 6, 12-13, 23, 27, 28, 38-41, 43, 45, 47 and 49 are provisionally rejected on the ground of non-statutory obviousness-type double patenting as allegedly unpatentable over claims 1-7 of co-pending Application No. 10/537,704.

Applicants recognize that this is a provisional rejection because the conflicting claims have not in fact been patented. Applicants also recognize that the rejection can be overcome by a timely filed terminal disclaimer. Applicants intend to address this rejection once the claims are found otherwise allowable.

In view of the foregoing amendments and remarks, it is firmly believed that the subject application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

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